A

SCSS-ST-25

PCB Group

Question Booklet Sr. No.

Exam Date : 23/03/2025 **Time :** 10.00 am. to 12.00 pm. **Max. Marks :** 400

Important Instructions :

1. Immediately fill the particulars on this page of The Test Booklet as well as Answer-sheet with Black or Blue Ball Pen. ***Use of Pencil is strictly prohibited.***
2. Do not open this Test Booklet until you are asked to do so.
3. This Test Booklet contains four sections A, B, C & D.
4. The Section-**A** contains **25** questions of **Physics.**
5. The Section-**B** contains **25** questions of **Chemistry.**
6. The Section-**C** contains **25** questions of **Biology**
7. The Section-**D** contains **25** questions of **Basic Mathematics & Mental ability.**
8. This Test Booklet contains **100** questions.
9. There are **four** choices for every question out of which only one choice is most correct (MCQ). Dark the appropriate circle on the OMR Answer-sheet with Blue/Blak Ball pen.
10. Each question carries 4 marks. There is negative marking system. For each wrong answer **1 mark will be deducted from obtained marks**.
11. Filling up more than one responses in any question will be treated as wrong response and marks for this will be deducted according to negative system.
12. **Do not fold or make any stray marks on the Answer-sheet.**
13. No candidates is allowed to carry any printed or written textual material, bits of paper, cell phone and any other electronic devices.
14. Rough work is to be done on the space provided in the Test Booklet only.
15. On completion of the test, the candidate must hand over the Answer-sheet to the Invigilator on duty. ***However, candidates are allowed to take away this Test Booklet with them.***

Name of Candidate (In capital letters) : _____

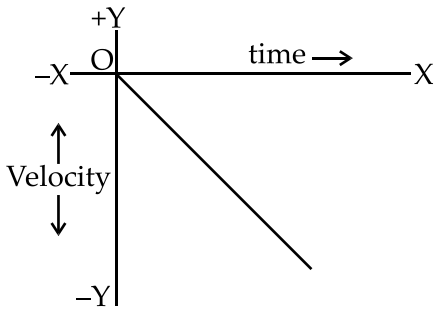
Seat No. : In figures

Section-A : Physics

01. A boy covers 120° on a circular path having radius 1 m. Find the distance travelled.

1) 2π meter
2) $2\pi / 3$ meter
3) $2\pi / 6$ meter
4) $3\pi / 2$ meter

02. The velocity-time graph of a particle moving on a straight line is as shown, its acceleration is



1) increasing
2) decreasing
3) positive
4) negative

03. Identify the **correct** statement about inertia.

1) Greater the mass, greater the inertia.
2) Lesser the weight, greater the inertia.
3) Lesser the mass, greater the inertia.
4) Greater the mass, lesser the inertia.

04. Two masses are in the ratio 5 : 6, their respective velocities are in the ratio 1 : 2. Find the ratio of their linear momentum.

1) 12 : 5
2) 12 : 1
3) 5 : 12
4) 5 : 6

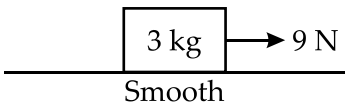
05. According to Newton's second law of motion, force is directly proportional to

1) change in momentum
2) rate of change of momentum
3) momentum
4) mass

06. If the speed of bicycle becomes four times then, the kinetic energy becomes

1) Four times the initial kinetic energy
2) Eight times the initial kinetic energy
3) Sixteen times the initial kinetic energy
4) Two times the initial kinetic energy

07. A block of mass 3 kg is initially at rest. A horizontal force of 9 N acts on the block for 2 s. Calculate the work done on the block by the force.



1) 50 J
2) 55 J
3) 54 J
4) 60 J

Space for rough work

08. A force of 50 N is applied on a block of mass 5 kg, at angle of 60° with the horizontal. If the block moves on the smooth horizontal surface, calculate the work done in 2 s, by the gravitational force.

1) 500 J
2) 250 J
3) 25 J
4) 0 J

09. If earth of mass 6×10^{24} kg attracts a small stone of mass 1 kg by force of 10 N, then what will be the force exerted by the stone on the earth ?

1) As mass of stone is very less so it will not apply force on Earth
2) Less than 10 N
3) Greater than 10 N
4) Equal to 10 N

10. A ball is thrown upward with speed of 20 m/s. Find the speed of the ball after 3 second. [$g = 10\ ms^{-2}$]

1) 10 m/s, upward
2) 20 m/s, upward
3) 10 m/s, downward
4) 20 m/s, downward

11. A satellite is revolving around the earth. The earth attracts satellite by gravitational force but still it will not fall on the earth, why ?

1) Both earth and satellite attracts each other that is why forces cancel each other.
2) Distance between them is very high.
3) Satellite moves in the direction of velocity rather than force.
4) All of the above.

12. When equal quantities of an oil, water and mercury are poured into the beaker, the order in which the liquids arrange themselves from bottom to top is,

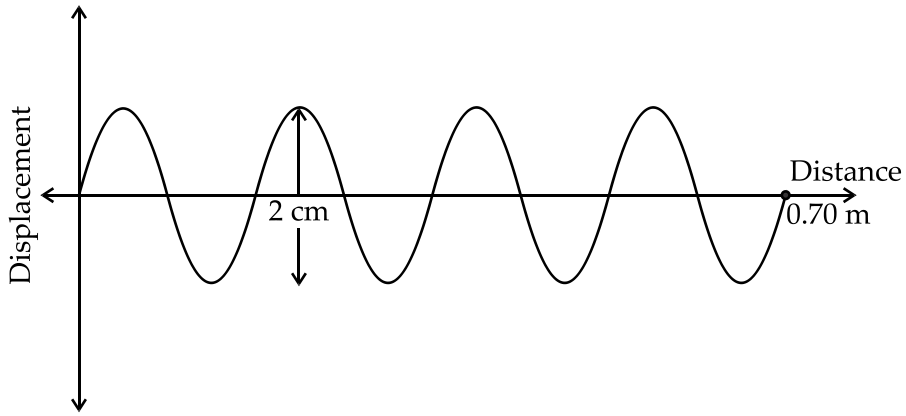
1) Mercury, water, oil
2) Water, mercury, oil
3) Water, oil, mercury
4) Mercury, oil, water

13. The pressure at a point inside a fluid in a container is,

1) dependent on height of fluid column
2) dependent on density of the fluid
3) equal in all directions
4) all of the above are true

Space for rough work

14. A transverse wave is shown below. What is the amplitude and wavelength of wave ?



1) Amplitude = 2 cm; Wavelength = 0.175 m
2) Amplitude = 2 cm; Wavelength = 0.70 m
3) Amplitude = 1 cm; Wavelength = 0.175 m
4) Amplitude = 1 cm; Wavelength = 0.70 m

15. Match the column :

	Column - I		**Column - II**
A)	High pitch	i)	Faint sound
B)	Low pitch	ii)	Loud sound
C)	Small amplitude	iii)	High frequency
D)	Large amplitude	iv)	Low frequency

1) A $\rightarrow$ iii; B $\rightarrow$ iv; C $\rightarrow$ i, D $\rightarrow$ ii
2) A $\rightarrow$ i; B $\rightarrow$ ii; C $\rightarrow$ iii, D $\rightarrow$ iv
3) A $\rightarrow$ iv; B $\rightarrow$ iii; C $\rightarrow$ i, D $\rightarrow$ ii
4) A $\rightarrow$ iii; B $\rightarrow$ i; C $\rightarrow$ iv, D $\rightarrow$ ii

16. The heat capacity of a solid of mass 175 g is 350 J $^{\circ}C^{-1}$, its specific heat capacity can be
1) 1.8 J g^{-1} $^{\circ}C^{-1}$
2) 2.0 J g^{-1} $^{\circ}C^{-1}$
3) 2.2 J g^{-1} $^{\circ}C^{-1}$
4) 2.4 J g^{-1} $^{\circ}C^{-1}$

17. The physical quantity that determines the thermal state of the body is
1) internal energy
2) heat
3) temperature
4) energy

18. The resistance of a 100 cm long uniform metallic wire of resistivity σ and circular area of cross-section, having radius 1 mm is $\frac{\sigma 10^{x}}{\pi}$ ohm, then x can be :
1) 6
2) 2
3) 3
4) 8

Space for rough work

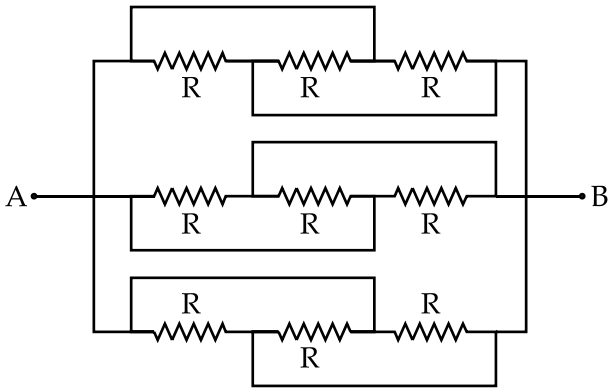
19. From the circuit given below, find the net resistance between points A and B.

1) $\frac{R}{3}$

2) 9 R

3) $\frac{R}{9}$

4) 3 R



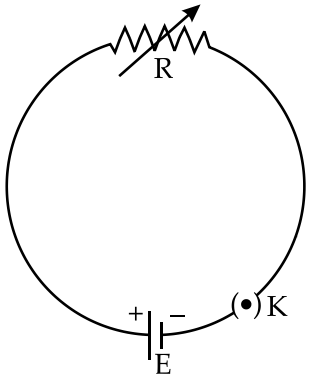
20. From the circuit given below, on increasing the value of resistance, the magnetic field induction B, at the centre of the ring will be

1) outward and increasing

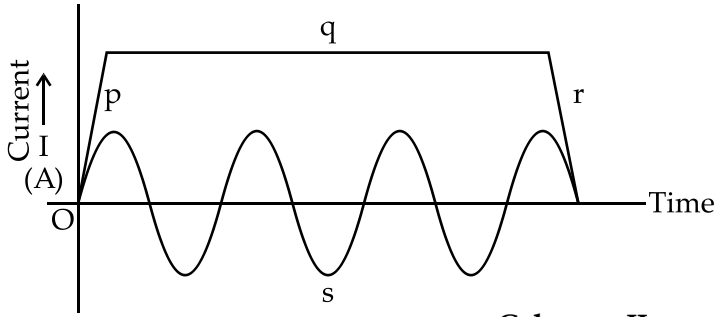
2) outward and decreasing

3) inward and increasing

4) inward and decreasing



21. The graph shown below represents alternating current (A.C.) and direct current (D.C.). Match the correct combinations.



	Column - I		**Column - II**
A)	region p	i)	A.C.
B)	region q	ii)	D.C. decreasing
C)	region r	iii)	D.C. constant
D)	region s	iv)	D.C. increasing

1) A - iii, B - ii, C - iv, D - i

2) A - iv, B - iii, C - ii, D - i

3) A - i, B - iii, C - iv, D - ii

4) A - ii, B - i, C - iii, D - iv

Space for rough work

22. The critical angle of an optically denser medium and air is $\frac{\pi}{6}$ radian or 30°, the speed of the light in the denser medium can be

1) 2×10^8 m/s
2) 3×10^8 m/s
3) $\frac{3}{2} \times 10^8$ m/s
4) $\frac{2}{3} \times 10^8$ m/s

23. A virtual image is always

1) inverted
2) need not to be erect
3) caught on the screen
4) has no light energy

24. Match the column (A) with column (B) for a convex lens, when a real object is placed at various positions on the principal axis of the lens.

	Column - A		**Column - B**
A)	Beyond centre of curvature	i)	Real, inverted and large
B)	Between principal focus and centre of curvature	ii)	Real, inverted and small
C)	Between optic centre and focus	iii)	Real, inverted and same size
D)	At centre of curvature	iv)	Virtual, erect and large

1) A - i, B - ii, C - iv, D - iii
2) A - ii, B - i, C - iv, D - iii
3) A - ii, B - iii, C - iv, D - i
4) A - iii, B - i, C - iv, D - ii

25. The displacement of particle is given by $x = pt + \frac{1}{2}bt^2$, where particle is performing rectilinear motion with constant acceleration, then what is the unit of 'b' ? ('t' represents time)

1) m/s
2) m^2/s
3) m/s^2
4) s/m

Space for rough work

Section-B : Chemistry

26. The radius of first Bohr orbit of hydrogen atom is 0.529 A°. The radius of the third Bohr orbit of hydrogen atom will be

1) 8.46 A° 2) 0.705 A°

3) 1.59 A° 4) 4.76 A°

27. Which of the following is **correct** ?

1) $\frac{(w/W)\%\text{by weight}}{(w/V)\%\text{by volume}} = \frac{\text{wt of solution}}{\text{volume of solution}} \times 100$

2) $\frac{(w/W)\%\text{ by weight}}{(w/V)\%\text{ by volume}} = \frac{\text{weight of solution}}{\text{volume of solution}}$

3) $\frac{(w/W)\%\text{ by weight}}{(w/V)\%\text{ by volume}} = \text{density of solution}$

4) $\frac{(w/W)\%\text{ by weight}}{(w/V)\%\text{ by volume}} = \frac{\text{volume of solution}}{\text{weight of solution}}$

28. Which of the following reaction **incorrectly** given ?

1) $Al_2O_3 + 2NaOH \longrightarrow 2NaAlO_2 + H_2O$

2) $Al_2O_3 + 2NaOH \longrightarrow Al(OH)_2 + NaAlO_2 + NaO$

3) $Al_2O_3 + 6HCl \longrightarrow 2AlCl_3 + 3H_2O$

4) $3Fe + 4H_2O \longrightarrow Fe_3O_4 + 4H_2$

29. **Statement - I :** Vehicular smoke is source of oxide of nitrogen which causes water pollution.

Statement - II : Excessive algal growth pollutes soil.

1) Both statement - I and statement II are correct.

2) Both statement - I and statement II are incorrect.

3) Statement - I is correct and statement II is incorrect.

4) Statement - I is incorrect and statement II is correct.

30. What is the pH of 0.01 M H_2SO_4 solution ? (Given : log 2 = 0.3)

1) 2 2) 1.7

3) 2.3 4) 7

Space for rough work

31. In the given series of reactions, what are Y and Z respectively ?

$NaCl + H_2O + CO_2 + NH_3 \longrightarrow X + Y$

$\Delta \downarrow -H_2O, -CO_2$

$Q \xleftarrow{+10H_2O} Z$

Q is used to remove parmanent hardness of water.

1) $NaHCO_3$, NaOCl
2) NH_4Cl, Na_2CO_3
3) Na_2CO_3, NH_4Cl
4) Na_2CO_3, $NaHCO_3$

32. The valence electronic configuration of two elements are 2, 8, 4 and 2, 8, 7 respectively. The type of bond present between them is

1) Ionic bond
2) Metallic bond
3) Covalent bond
4) Hydrogen bond

33. Which of the following salts aqueous solution gives pH more than 7 ?

1) NaCl
2) KCl
3) NH_4Cl
4) CH_3COONa

34. The oxidation number of Cr in K_3CrO_8 is

1) +13
2) +6
3) +5
4) +4

35. How many species from the following will reduce $KMnO_4$ in acidic medium ?

O_3, F_2, Cl_2, Br_2, PbO_2, $CaOCl_2$, H_2O_2/OH^-, I_2, HNO_2, H_2SO_4

1) 5
2) 6
3) 7
4) 8

36. Match the column - I and column - II.

	Column - I		**Column - II**
A)	$Cu + HNO_3$ (concentrated)	i)	NO
B)	$Zn + HNO_3$ (very diluted)	ii)	NO_2
C)	$Mg + HNO_3$ (very very diluted)	iii)	N_2O
D)	$Pb + HNO_3$ (diluted)	iv)	H_2

1) $A \rightarrow i,\ B \rightarrow ii,\ C \rightarrow iii,\ D \rightarrow iv$
2) $A \rightarrow iv,\ B \rightarrow i,\ C \rightarrow iii,\ D \rightarrow ii$
3) $A \rightarrow ii,\ B \rightarrow iii,\ C \rightarrow i,\ D \rightarrow iv$
4) $A \rightarrow ii,\ B \rightarrow iii,\ C \rightarrow iv,\ D \rightarrow i$

37. What are X and Y in given reactions ?

i) $X + CuSO_4 \longrightarrow XSO_4 + Cu$

ii) $Y + CuSO_4 \longrightarrow YSO_4 + Cu$

1) Fe, Ag
2) Ag, Au
3) Al, Au
4) Al, Zn

Space for rough work

38. The given elements A, B, C and D have electronic configuration. (2, 8, 1), (2, 7), (2, 3) and (2, 8, 7) respectively. Which of the above elements is most electronegative ?

1) A 2) C

3) B 4) D

39. Which of the following is **incorrect** for Newland's law of octaves ?

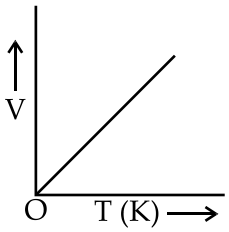
1) Elements arranged in their increasing order of atomic masses.

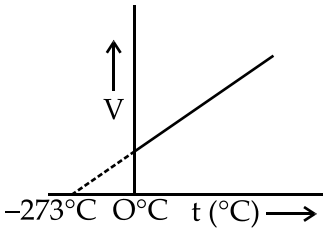
2) Every eighth element had properties similar to those of first.

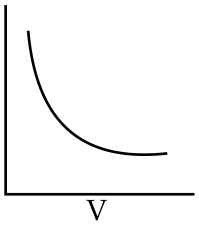
3) Magnesium shows similarity with hydrogen.

4) Lithium and sodium both have same properties.

40. Correct graph or graphs for Charle's law

a) 

b) 

c) 

1) a only 2) b only

3) c only 4) both a and b

41. At constant pressure a gas occupies 50 L at 27°C, at what temperature it occupies 60 L ?

1) 305.4 K 2) 54°C

3) 32.4°C 4) 360 K

42. The amount of V_2O_5 needed to produce sufficient oxygen which will react with hydrogen to produce 18 g of water from the following reaction is

$$V_2O_5 + 3H_2O_2 \longrightarrow 2 \begin{matrix} & O & \\ & \| & \\ HO & V-O-OH & \\ & | & \\ & OH & \end{matrix} + \frac{1}{2}O_2$$

$$H_2 + \frac{1}{2}O_2 \longrightarrow H_2O$$

1) 1 mole 2) 2 mole

3) 3 mole 4) $\frac{1}{2}$ mole

43. The quantity of copper (II) oxide will react with 1.8 L of hydrogen at STP is
(Given atomic weight of copper = 63.5 g mol^{-1})

1) 3.68 g 2) 22.4 g

3) 79.5 g 4) 6.388 g

Space for rough work

44. Identify the type of the following reaction of carbon compounds.

$CH_4 + 2O_2 \longrightarrow CO_2 + H_2O$

1) Addition reaction
2) Combustion reaction
3) Substitution reaction
4) Elimination reaction

45. When the stopper of bottle containing a colourless liquid was removed, it gave out smell like that of vinegar. The liquid in the bottle could be

1) Sodium bicarbonate solution
2) Ethyl alcohol solution
3) Ethanoic acid solution
4) Formic acid solution

46. Match the column - A and column - B.

	Column - A		**Column - B**
A)	Alkanol	i)	$R-COOH$
B)	Alkanal	ii)	$R-\overset{\overset{O}{\|\|}}{C}-R$
C)	Alkanone	iii)	$R-\overset{\overset{O}{\|\|}}{C}-H$
D)	Alkanoic acid	iv)	$R-OH$

1) A → i, B → ii, C → iv, D → iii
2) A → iv, B → ii, C → iii, D → i
3) A → i, B → iii, C → ii, D → iv
4) A → iv, B → iii, C → ii, D → i

47. If second member of alcohol family undergoes esterification reaction with second member of carboxylic acid family then name of ester formed and its formula will be respectively.

1) Ethyl butanoate, $H_3C\ CH_2\ COOCH_2CH_3$
2) Ethyl ethanoate, $H_3C\ COOCH_2\ CH_3$
3) Ethyl propanoate, $CH_3\ CH_2\ COOCH_2CH_3$
4) Propyl ethanoate $CH_3\ COOCH_2\ CH_2\ CH_3$

48. Hard water contains

1) only Ca^{2+}
2) only Mg^{2+}
3) both a and b
4) none of these

49. Match the column - I and column - II.

	Column - I		**Column - II**
A)	Nylon	i)	prepared by using wood pulp
B)	Teflon	ii)	used for making parachutes
C)	Polyester	iii)	used to make non-sticks cookwares
D)	Rayon	iv)	fabrics do not wrinkle easily

1) A → ii, B → iii, C → iv, D → i
2) A → ii, B → i, C → iv, D → iii
3) A → ii, B → iii, C → i, D → iv
4) A → iv, B → iii, C → ii, D → i

50. Which of the following is an Inexhaustible Natural Resources ?

1) Coal
2) Petroleum
3) Natural gas
4) Sunlight

Space for rough work

Section-C : Biology

51. A highly advanced farmer Mahesh wants to grow *Saccharum officinarum* plants genetically similar enough to the plants already available in his field. Which one of the following method would you suggest for this purpose ?

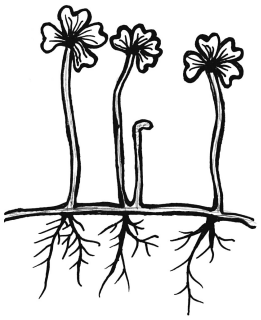
1) Sexual reproduction
2) True regeneration
3) Budding
4) Vegetative propagation

52. **Assertion (A) :** Euglenoids are unicellular, eukaryotic organisms having well developed nucleus.

Reason (R) : Euglenoids are having short and long flagella.

1) Both A and R are true and R is the correct explanation of A.
2) Both A and R are true but R is not the correct explanation of A.
3) A is true but R is false.
4) Both A and R are false.

53. Select the **incorrect** statement about the organism given in this diagram.



1) The given plant is having true root, true stem and true leaves.
2) It is photosynthetic autotrophs.
3) The given plant having leaf like, root like and stem like structure.
4) The given plant has vascular tissue such as xylem and phloem.

54. A cell in G_1 phase contains 3.2 pg of DNA, how much DNA will be present in each daughter cell immediately after mitosis ?

1) 1.6 pg
2) 3.2 pg
3) 6.4 pg
4) 12.8 pg

55. Hydroponics is a technique in which plants are grown in __A__ without __B__ .

1) A - Nutrient rich solution; B - Water
2) A - Nutrient deficient solution; B - Soil
3) A - Nutrient rich solution; B - Sunlight
4) A - Nutrient rich solution; B - Soil

56. Which of the following shows the last diploid stage in the life cycle of angiosperms ?

1) Megaspore mother cell
2) Zygote
3) Antipodal cell
4) Polar nuclei

57. A 16-year old female presents with short stature, webbed neck, widely spaced nipples and primary amenorrhea. She has streak ovaries and has not developed secondary sexual characteristics. Karyotype analysis reveals 45, X. Which of the following is the most likely cause of her condition ?

1) A mutation in the androgen receptor gene.
2) Trisomy rescue leading to mosaicism.
3) Nondisjunction during paternal meiosis.
4) Uniparental disomy of the X-chromosome.

58. Match the following mendelian characters with their corresponding dominant traits :

	Column - I (Characters)		**Column - II (Dominant trait)**
A)	Seed shape	i)	Yellow
B)	Seed colour	ii)	Green
C)	Pod colour	iii)	Round
D)	Pod shape	iv)	Inflated

1) A - iii, B - i, C - ii, D - iv
2) A - ii, B - iii, C - iv, D - i
3) A - i, B - ii, C - iii, D - iv
4) A - iii, B - ii, C - i, D - iv

59. **Assertion (A) :** Sickle cell anaemia is an autosomal recessive disorder caused by a single nucleotide change in the β-globin gene of haemoglobin.

Reason (R) : The mutation results in the substitution of valine for glutamic acid at the 7^{th} position of the β-globin chain.

1) Both A and R are correct and R is correct explanation of A.
2) Both A and R are correct and R is not correct explanation of A.
3) A is true and R is false.
4) Both A and R is false.

60. You are asked to help solve a murder case, A sample of what they believe to be the killer's DNA is brought to you from the crime scence for chemical analysis. Adenine, thymine, ribose and uracil were detected in this sample, leading to the conclusion that it is ?

1) Pure RNA
2) Pure DNA
3) Probably mixture of r-RNA and m-RNA
4) Probably a mixture of DNA and RNA

61. Which of the following is a **wrong** statement ?

1) The nucleosomes in a chromatin are seen as 'beads on string' structure. When viewed under electron microscope.
2) Histone protein is rich in basic amino acids.
3) Positively charged DNA wrapped around negatively charged histone octamer.
4) In most of the organism DNA acting as genetic material.

62. Identify **True (T)** and **False (F)** statements.

i) Diagnosis and treatment of the disease are least important aspects of human health management.
ii) With the help of biotechnology, diagnosis of AIDS can be done within few minute.
iii) Vaccine is the antigen which provide only permanent immunity.
iv) In artificially produced vaccines, antigen is produced in the laboratory.

1) T T F T
2) F T F T
3) T F T F
4) F F T F

63. The primary difference between sedimentary and gaseous cycles is that in ..... cycles the nutrient does not ..... .

1) Sedimentary, leave the terrestrial environment.
2) Sedimentary, leave the aquatic environment.
3) Gaseous, leave the aquatic environment.
4) Sedimentary, enters the atmosphere.

64. Observe the given examples of organisms.

Bivalve, *Balanoglossus*, Brittle star, Filarial worm, Earthworm, *Nereis*

How many of the above examples are hermaphrodites ?

1) Two
2) Four
3) Three
4) Five

65. A patient suffering from severe dehydration is given an intravenous saline solution. If a hypotonic solution were mistakenly administered instead of an isotonic solution, what would happen to the patients red blood cells ?

1) Cells would shrink due to water loss.
2) Cells would remain unaffected.
3) Cells would swell and burst due to water intake.
4) No osmosis would occur.

66. **Assertion (A) :** Transmission of impulses through the axonal length is continuous.

Reason (B) : Myelin sheath is discontinuous on axon.

1) Both A and R is correct and R is correct explanation of A.
2) Both A and R is correct and R is not correct explanation of A.
3) A is false and R is true.
4) Both A and R is false.

67. Which of the following sentence is **incorrect** about endocrine glands ?

1) They are also called as ductless glands.
2) These glands can store their secretions.
3) Their secretions are called as hormones.
4) They release their secretions directly into blood stream.

68. Read the following sentences about Lung. Which of the following is **incorrect** ?

1) They are present on either sides of Heart in abdominal cavity.
2) Lung has double layered covering called pleura.
3) Lungs are elastic like a sponge.
4) Lungs are made up of many small compartments, called as alveoli.

69. If salivary amylase is lacking in the saliva, which of the following events in the mouth cavity will be affected ?

1) Proteins breaking down into amino acids.
2) Starch breaking down into sugars.
3) Fats breaking down into fatty acids and glycerol.
4) Absorption of vitamins.

70. If the egg is not fertilised by the sperm, then which of the following events occurs in female body ?

I) Degeneration of egg
II) Degeneration of uterus
III) Corpus albicans converts into corpus luteum.
IV) Level of progesterone increases
V) Level of progesterone decreases

1) I, II, III and V
2) I, II and IV
3) I, II and V
4) I, II, III and V

71. The use of condoms in males and females works on the principle of :

1) Creation of a mechanical barrier so that sperm does not reach the egg.

2) By changing the hormonal balance of the body.

3) By changing both mechanical and hormonal balance.

4) By allowing meeting of sperm and egg inside the body.

72. Match the **column - I (Disease)** with **column - II (Carrier)** and choose the **correct** option :

	Column - I (Disease)		**Column - II (Carrier)**
A)	Dengue	i)	Female *Anopheles*
B)	Malaria	ii)	Female *Culex*
C)	Elephantiasis	iii)	*Aedes aegypti*

1) A - ii, B - i, C - iii
2) A - iii, B - i, C - ii
3) A - i, B - ii, C - iii
4) A - ii, B - iii, C - i

73. Which of the following sentence is / are **correct** about arteries ?

i) These blood vessels carry blood towards heart.

ii) These blood vessels carry blood away from heart.

iii) These are superficially located in the body.

iv) These vessels do not have valves.

1) i and ii
2) ii and iii
3) ii and iv
4) iii and iv

74. Choose the **correct** sequence of human evolution.

1) Ramapithecus → Australopithecus → Neanderthal → Dryopitecus

2) Dryopithecus → Ramapithecus → Australopithecus → Neanderthal

3) Australopithecus → Homo erectus → Dryopitecus → Ramapithecus

4) Dryopithecus → Australopithecus → Ramapithecus → Cromagnon skilled man

75. Which of the following sentences is / are **incorrect** about ***Rhizobium*** ?

i) They are obtained from root nodules of leguminous plants.

ii) They are rod-shaped organisms.

iii) Plant supply nitrates, nitrites and amino acids to *Rhizobia* and in exchange get energy in the form of carbohydrates.

iv) Use of *Rhizobium* increases the use of chemical fertilizers.

1) i and ii
2) ii and iii
3) iii and iv
4) i and iv

Section-D : Basic Mathematics & Mental Ability

76. If α and β are the zeroes of the quadratic polynomial $f(t) = t^2 - 4t + 3$, then the value of $\alpha^4\beta^3 + \alpha^3\beta^4$ is

1) 104 2) 108

3) 112 4) 5

77. The pair of linear equations $2kx + 5y = 7$, $6x - 5y = 11$ has a unique solution if

1) $k \neq -3$ 2) $k \neq 6$

3) $k \neq 5$ 4) $k \neq -5$

78. Find the sum to 200 terms of the series 1 + 4 + 6 + 5 + 11 + 6 + ...

1) 30,210 2) 29,800

3) 30,200 4) none of these

79. $\Delta ABC \sim \Delta DEF$ and the perimeters of ΔABC and ΔDEF are 30 cm and 18 cm respectively. If BC = 9 cm, then EF = ?

1) 6.3 cm 2) 5.4 cm

3) 7.2 cm 4) 4.5 cm

80. The number of points on x-axis which are at a distance c ($c < 3$) from the points (2, 3) is

1) 2 2) 1

3) infinite 4) none of these

81. If $\tan 15° = 2 - \sqrt{3}$, then the value of $\cot^2 75°$ is

1) $7 + \sqrt{3}$ 2) $7 - 2\sqrt{3}$

3) $7 - 4\sqrt{3}$ 4) $7 + 4\sqrt{3}$

82. PQ is a tangent to a circle with centre O at the point P. If ΔOPQ is an isosceles triangle, then $\angle OQP$ is equal to

1) 30° 2) 45°

3) 60° 4) 90°

83. If the circumference of two circles are in the ratio 2 : 3, then the ratio of their areas is :

1) 4 : 9 2) 2 : 3

3) 3 : 2 4) 9 : 4

84. The ratio of the total surface area to the lateral surface area of a cylinder with base radius 80 cm and height 20 cm is

1) 1 : 2 2) 2 : 1

3) 3 : 1 4) 5 : 1

Space for rough work

85. If H.C.F. $(a, b) = 12$ and $a \times b = 1800$, then L.C.M. $(a, b) =$

1) 3600 2) 900

3) 150 4) 90

86. In a single throw of a pair of dice, the probability of getting the sum a perfect square is

1) $\frac{2}{18}$ 2) $\frac{7}{36}$

3) $\frac{1}{6}$ 4) $\frac{2}{9}$

87. $30^3 + 20^3 - 50^3$ is equal to

1) 0 2) –9000

3) –90000 4) 1

88. $\log(x+5) + \log(x-5) = 4\log 2 + 2\log 3$ then $x =$

1) 10 2) 13

3) 8 4) not possible

89. If × means –, + means ÷, – means × and ÷ means +, then 15 – 2 ÷ 900 + 90 × 100 = ...

1) 190 2) 180

3) 0 4) none of these

90. If 'sky' is 'star', 'star' is 'cloud', 'cloud' is 'earth', 'earth' is 'tree' and 'tree' is 'book', then where do the birds fly ?

1) Cloud 2) Sky

3) Star 4) Data inadequate

91. Pointing to a person, a man said to a woman, "His mother is the only daughter of your father." How was the woman related to the person ?

1) Aunt 2) Mother

3) Wife 4) Daughter

92. In a queue, Shikhar is ninth from the back. Arun's place is eighth from the front. Nikhil is standing between the two. What could be the minimum number of boys standing in the queue ?

1) 8 2) 10

3) 12 4) 14

93. Mohini went to the movies nine days ago. She goes to the movies only on Thursday. What day of the week is today ?

1) Thursday 2) Saturday

3) Sunday 4) Tuesday

Space for rough work

94. In a group of 15 people, 7 read French, 8 read English while 3 of them read none of these two. How many of them read French and English both ?

1) 0 2) 3

3) 4 4) 5

95. Going 50 m to the South of her house, Radhika turns left and goes another 20 m. Then, turning to the North, she goes 30 m and then starts walking to her house. In which direction is she walking now ?

1) North-west 2) North

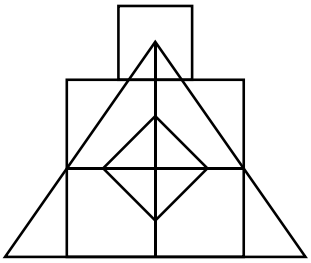
3) South-east 4) East

96. A, B, C and D are to be seated in a row. But C and D cannot be together. Also, B cannot be at the third place. On the basis of given information, which of the following must be false ?

1) A is at the first place. 2) A is at the second place.

3) A is at the third place. 4) A is at the fourth place.

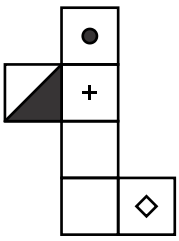
97. Count the number of triangles and squares in the given figure.



1) 21 triangles, 7 squares 2) 18 triangles, 8 squares

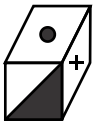
3) 20 triangles, 8 squares 4) 22 triangles, 7 squares

98. The sheet of paper shown in the figure (X), is folded to form a box. Choose from amongst the alternatives (1), (2), (3) and (4), the boxes that are similar to the box that will be formed.



(X)

1) 

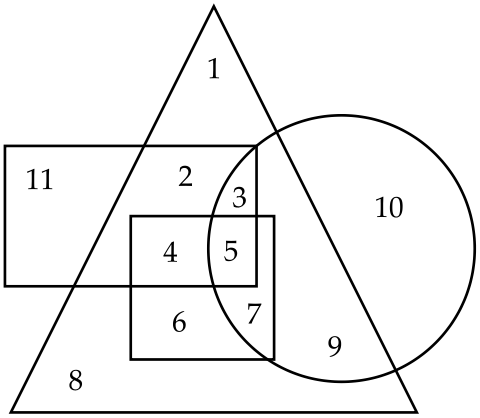
2) 

3) 

4) 

Space for rough work

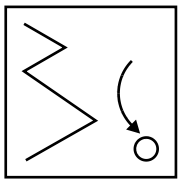
99. In the given diagram, circle represents professionals, square represents dancers, triangle represents musicians and rectangle represents Europeans. Different regions in the diagram are numbered 1 to 11. Who among the following is neither a dancer nor a musicians but is professional and not a European ?



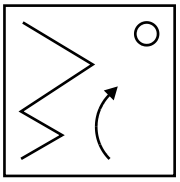
1) 8 2) 11

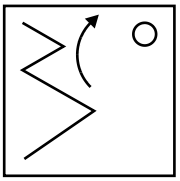
3) 1 4) 10

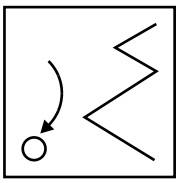
100. In the followig question, choose the correct mirror-image of the figure (X) from amongst the four alternatives (1), (2), (3) and (4) given along with it.

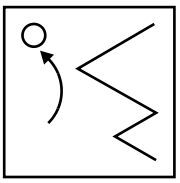


(X)

1) 

2) 

3) 

4) 

Space for rough work

Space for rough work

SHIV CHHATRAPATI SHIKSHAN SANSTHA, LATUR

RAJARSHI SHAHU JR. SCIENCE COLLEGE, LATUR

Shahu Screening Test 2025

IMPORTANT DATES - STATE AND CBSE BOARD STUDENTS

SHAHU SCREENING TEST - 2025 (OFFLINE MODE ONLY) DATE : 23 March 2025	PCB GROUP - 10-00 AM TO 12-00 PM PCM GROUP - 02-30 PM TO 05-00 PM
ADMIT CARD ISSUE	20 March 2025.
Online Display of Provisional Answer Key	23-March-2025 : After 07-00 PM
Objections on Provisional Answer Key (Through Login)	25-March-2025 : UPTO 05-00 PM
Online Declaration - 1. Final Answer Key, 2. Copy of Candidate OMR Sheet, 3. Result of SCREENING TEST -2024 (Individual Login)	05-April-2025 After 02-00 PM
Parent Meeting of Selected Candidate	06-April-2025 : 11-00 AM
Admissions :- First Selected List	06-Apr to 09 April-2025 : 02 PM
Admisions : Second Selected List	10-April to 12-Apr -2025 : 02 PM

Date of Commencement of Classes will be declared in parent meeting

वरील तारखांमध्ये काही बदल झाल्यास वेबसाईट वर सूचना दिली जाईल.